

CEP.4 Solving an equation for a specific variable

ex.1 solve $2x - 3y = 10$ for y

I start by using the subtraction property of equality to move $2x$

$$\begin{array}{r} 2x - 3y = 10 \\ -2x \quad -2x \\ \hline -3y = -2x + 10 \end{array}$$

now I have a negative 3 being multiplied by y , so I want to use the division property of equality to isolate y .

$$\begin{array}{r} -3y = -2x + 10 \\ \hline -3 \quad -3 \quad 3 \\ \hline y = \frac{2}{3}x + \frac{10}{3} \end{array}$$

I must divide both sides & EVERY part of each side

my final answer is
 $y = \frac{2}{3}x + \frac{10}{3}$

ex.2 solve $z = \frac{c-b}{2}$ for c .

I start by using the multiplication property of equality to multiply both sides by 2 because $c-b$ is divided by 2

$$2 \cdot z = \frac{c-b}{2} \cdot 2$$

$$2z = c - b$$

now c & b are separated by subtraction, so I can use the addition property of equality to isolate c .

$$\begin{array}{r} 2z = c - b \\ +b \quad +b \\ \hline 2z + b = c \end{array}$$

my final answer is
 $c = 2z + b$